

**From:** [Stacey.Zee@faa.gov](mailto:Stacey.Zee@faa.gov)  
**To:** [Christine\\_Whitacre@nps.gov](mailto:Christine_Whitacre@nps.gov); [Hurd, David L \(Moved\)](#); [Spier, Mark E](#); [Trenchik, Melissa](#); [Stanley, Randy GRS](#); [Garza, Rolando L](#); [theresa\\_ely@nps.gov](mailto:theresa_ely@nps.gov); [Keohan, Tom](#); [NBaker@icfi.com](mailto:NBaker@icfi.com); [meg.scantlebury@icfi.com](mailto:meg.scantlebury@icfi.com); [Steve@spacex.com](mailto:Steve@spacex.com); [Jaclyn.Johnson@cardnotec.com](mailto:Jaclyn.Johnson@cardnotec.com); [Lori.Thursby@cardnotec.com](mailto:Lori.Thursby@cardnotec.com); [nsullivan@icfi.com](mailto:nsullivan@icfi.com); [Lemuel.Thomas@faa.gov](mailto:Lemuel.Thomas@faa.gov); [Daniel.Czelusniak@faa.gov](mailto:Daniel.Czelusniak@faa.gov); [Daniel.Murray@faa.gov](mailto:Daniel.Murray@faa.gov); [Katherine.Andrus@faa.gov](mailto:Katherine.Andrus@faa.gov); [Bill.Martin@thc.state.tx.us](mailto:Bill.Martin@thc.state.tx.us); [Winton, Bryan](#); [Eckhardt, Cheryl](mailto:Eckhardt, Cheryl); [cvaughn@achp.gov](mailto:cvaughn@achp.gov); [Kendal.Keyes@tpwd.texas.gov](mailto:Kendal.Keyes@tpwd.texas.gov); [michael.strutt@tpwd.texas.gov](mailto:michael.strutt@tpwd.texas.gov); [ngabriel@achp.gov](mailto:ngabriel@achp.gov); [Jess, Robert RJ](#); [Ross.Melinchuk@tpwd.state.tx.us](mailto:Ross.Melinchuk@tpwd.state.tx.us); [Gardiner, Dawn](#); [Jayson.M.Hudson@usace.army.mil](mailto:Jayson.M.Hudson@usace.army.mil); [Justin.Kockritz@thc.state.tx.us](mailto:Justin.Kockritz@thc.state.tx.us); [Ross.Melinchuk@tpwd.texas.gov](mailto:Ross.Melinchuk@tpwd.texas.gov); [Nicholas.Baker@icfi.com](mailto:Nicholas.Baker@icfi.com); [Jaclyn.Johnson@cardno-gs.com](mailto:Jaclyn.Johnson@cardno-gs.com); [Lori.Thursby@cardno-gs.com](mailto:Lori.Thursby@cardno-gs.com); [Neil.Sullivan@icfi.com](mailto:Neil.Sullivan@icfi.com); [Jeff.Raasch@tpwd.texas.gov](mailto:Jeff.Raasch@tpwd.texas.gov); [Hova.Woods@icfi.com](mailto:Hova.Woods@icfi.com); [jloichinger@achp.gov](mailto:jloichinger@achp.gov); [Durbín, Jeffrey L](#)  
**Subject:** FW: SpaceX Texas Launch Site - Batch 2 plans - Comments from USFWS and responses from SpaceX  
**Date:** Monday, December 1, 2014 9:37:36 AM  
**Importance:** High

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All –

Please see below- comments from USFWS on the Batch 2 plans and SpaceX's resolution of the comments.

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**From:** Steve Davis [<mailto:Steve@spacex.com>]  
**Sent:** Monday, December 01, 2014 10:53 AM  
**To:** Zee, Stacey (FAA)  
**Subject:** FW: SpaceX Texas Launch Site - Batch 2 plans

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**From:** Steve Davis  
**Sent:** Friday, November 14, 2014 1:34 PM  
**To:** 'Stacey.Zee@faa.gov'  
**Cc:** [bryan\\_winton@fws.gov](mailto:bryan_winton@fws.gov); Matthew Thompson  
**Subject:** RE: SpaceX Texas Launch Site - Batch 2 plans

Hi Bryan,

Thanks for chatting earlier. Per discussion:

1. Our final designs, with regards to spill prevention, will be approved (and stamped) by a licensed Professional Engineer, who checks the design for both technical feasibility and compliance with state and federal regulations.
2. We use double walled tanks.
3. While double walled tanks are likely sufficient to meet all regulations, we will (for both safety and environmental cognizance) still be using forms of secondary containment beyond just the double wall.
4. The spill-kits quoted below are for small leaks/spills; the larger potential incidents are mitigated through design, double walls, and secondary containment.
5. The tanks are not always kept full

Does this address your comment below?

Thanks,  
Steve

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**From:** [Stacey.Zee@faa.gov](mailto:Stacey.Zee@faa.gov) [<mailto:Stacey.Zee@faa.gov>]  
**Sent:** Wednesday, November 12, 2014 12:26 PM  
**To:** Steve Davis; Matthew Thompson  
**Cc:** [Nicholas.Baker@icfi.com](mailto:Nicholas.Baker@icfi.com); [Hoya.Woods@icfi.com](mailto:Hoya.Woods@icfi.com)  
**Subject:** FW: SpaceX Texas Launch Site - Batch 2 plans

[Comments on batch 2 plans.](#)

**From:** Winton, Bryan [[mailto:bryan\\_winton@fws.gov](mailto:bryan_winton@fws.gov)]  
**Sent:** Wednesday, November 12, 2014 12:24 PM  
**To:** Zee, Stacey (FAA)  
**Cc:** Mary Orms; Pat Clements; Dawn Gardiner; Ernesto Reyes; Rob Jess; Mark Spier  
**Subject:** Re: SpaceX Texas Launch Site - Batch 2 plans

Regarding:  
SpaceX Texas Launch Site  
Spill Prevention, Control, and Countermeasures  
(SPCC) Plan  
Revision 4  
June 2014

I have the following comments:

The table shows that up to 221,180 gallons of liquids (mostly oil, gasoline, diesel, and kerosene, but also ISOPAR, monomethyl hydrazine, and nitrogen tetroxide will be stored at the vertical launch site.

However, only 30-, 65- and 85-gallon spill prevention kits will be available on-site (at several sites within the Vertical Launch Area). Cleanup kit(s) capabilities from all sites combined will have a cleanup potential of 530-gallons, or only 0.002% of the on-site liquids. This seems grossly inadequate.

More importantly, due to the lack of permeability of the soils in that area, and proximity of the dune system and ocean to the site, and the proximity of the National Wildlife Refuge, State of Texas Conservation area (Boca Chica State Park), and historical features present nearby, I suggest the following:

1. Store all or most of the hazardous materials off-site until needed. i.e., in Brownsville somewhere.
2. Construct a berm around the 50-acre site sufficiently high to contain the minimum number of gallons of fuel that will be stored on-site (hopefully significantly less than 220K gallons!) This will keep a catastrophic spill out of the ocean and off the refuge(s).

In its current form, the SPPC Plan is grossly inadequate to address the potential of a catastrophic spill. If it cannot be contained then it should be stored somewhere else. The table states, "... likely to be contained", which doesn't give me (the reader and manager of the refuge) sufficient assurance that our lands adjacent to your site will be sufficiently protected in the event of a spill.

The use of double or triple wall containers could help off-set these concerns (to a certain extent) but still, 220K gallons of hazardous liquids in this area is a major concern due to proximity of the site to the Gulf and because of the low permeability in the soils which means every gallon will scatter out on the surface of the land.

bryan winton  
refuge manager  
(956) 784-7521

On Wed, Nov 12, 2014 at 9:59 AM, <[Stacey.Zee@faa.gov](mailto:Stacey.Zee@faa.gov)> wrote:

All –

As noted in the email below, only one comment was received on the Batch 2 Plans and is addressed below. THC sent a letter indicating no comments – it is attached here for your files.

Per the PA – this is the second round review of the plans. Any comments are due on November 26<sup>th</sup>. Because only one comment was received in this last round and did not result in any changes to the plans, we propose going final with the plans on November 26<sup>th</sup> if no additional comments are received. Please let me know if you have any issues with that approach.

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**From:** Zee, Stacey (FAA)  
**Sent:** Monday, November 10, 2014 6:59 AM  
**To:** Keohan, Tom; Steve Davis  
**Cc:** Cheryl Eckhardt; [NBaker@icfi.com](mailto:NBaker@icfi.com); [meg.scantlebury@icfi.com](mailto:meg.scantlebury@icfi.com); [Steve@spacex.com](mailto:Steve@spacex.com); Jaclyn Johnson; [Lori.Thursby@cardnotec.com](mailto:Lori.Thursby@cardnotec.com); [nsullivan@icfi.com](mailto:nsullivan@icfi.com); Thomas, Lemuel (FAA); Czelusniak, Daniel (FAA); Murray, Daniel (FAA); Andrus, Katherine (FAA); [Bill.Martin@thc.state.tx.us](mailto:Bill.Martin@thc.state.tx.us); Bryan Winton; Christine Whitacre; [cvaughn@achp.gov](mailto:cvaughn@achp.gov); [Kendal.Keyes@tpwd.texas.gov](mailto:Kendal.Keyes@tpwd.texas.gov); Mark Spier; [michael.strutt@tpwd.texas.gov](mailto:michael.strutt@tpwd.texas.gov); [ngabriel@achp.gov](mailto:ngabriel@achp.gov); [Randy.Stanley@nps.gov](mailto:Randy.Stanley@nps.gov) <nps>; Robert Jess; Rolando Garza; [Ross.Melinchuk@tpwd.state.tx.us](mailto:Ross.Melinchuk@tpwd.state.tx.us); Theresa Ely; Tom Keohan; [dawn.gardiner@fws.gov](mailto:dawn.gardiner@fws.gov); [Jayson.M.Hudson@usace.army.mil](mailto:Jayson.M.Hudson@usace.army.mil); [Justin.Kockritz@thc.state.tx.us](mailto:Justin.Kockritz@thc.state.tx.us); Ross Melinchuk ([Ross.Melinchuk@tpwd.texas.gov](mailto:Ross.Melinchuk@tpwd.texas.gov)); [Nicholas.Baker@icfi.com](mailto:Nicholas.Baker@icfi.com); [Jaclyn.Johnson@cardno-gs.com](mailto:Jaclyn.Johnson@cardno-gs.com); [Lori.Thursby@cardno-gs.com](mailto:Lori.Thursby@cardno-gs.com); [Neil.Sullivan@icfi.com](mailto:Neil.Sullivan@icfi.com); [Jeff.Raasch@tpwd.texas.gov](mailto:Jeff.Raasch@tpwd.texas.gov); hova.woods; [jloichinger@achp.gov](mailto:jloichinger@achp.gov); Melissa Trenchik; David Hurd  
**Subject:** SpaceX Texas Launch Site - Batch 2 plans

All –

We received one comment on the Batch 2 plans from NPS (Keohan)

“These plans state that power to the SpaceX facilities will come from commercial power providers. SpaceX has stated that they intend to generate power on-site with solar voltaic (PV). Please clarify and provide information about the commercial power or solar system.”

See resolution below between Steve Davis and Tom.

I will send out the Final Batch 2 plans later today for final 5 day review and concurrence.

-Stacey

**From:** Keohan, Tom [[mailto:tom\\_keohan@nps.gov](mailto:tom_keohan@nps.gov)]  
**Sent:** Wednesday, November 05, 2014 5:03 PM  
**To:** Steve Davis; Zee, Stacey (FAA)  
**Cc:** Cheryl Eckhardt

**Subject:** Re: batch 2

Steve/Stacey,

This sounds good to me. Thanks for the follow-up.

On Wed, Nov 5, 2014 at 2:58 PM, Steve Davis <[Steve@spacex.com](mailto:Steve@spacex.com)> wrote:  
Hi Stacey,

I talked to Tom (cc'd) and:

1. The final design of the power system will be included in the Facility Design Plan (FDP), to be reviewed by NPS when the plan is ready. The baseline is to go all solar assuming it is feasible (which we believe it is).
2. With regards to Batch 2 plans (spill prevention, stormwater, etc.), we would not have to update each reference in these plans to power in each plan because, w/ regards to power/design, the FDP is the guiding document.

Tom – did I capture this correctly?

Thanks,  
Steve

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Thomas G. Keohan, LEED Green Assoc.  
Acting Regional Historical Architect  
Historic Preservation Programs  
Cultural Resources Division  
Intermountain Regional Office  
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